

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

1. (ORIGINAL) A fuel cell comprising a porous electrically-conductive material as a substrate, a protonically-conductive membrane formed on the porous electrically-conductive material made of a mesoporous thin film comprising as a main component a crosslinked structure having a metal-oxygen skeleton having an acid group connected to at least a part thereof and having pores periodically aligned therein and a porous electrically-conductive material layer formed on the protonically-conductive membrane.
2. (ORIGINAL) The fuel cell as defined in Claim 1, wherein the crosslinked structure is formed by a silicon-oxygen bond.
3. (CURRENTLY AMENDED) The fuel cell as defined in Claim 1 [[or 2]], wherein the mesoporous thin film has a thickness of 10 µm or less.
4. (CURRENTLY AMENDED) The fuel cell as defined in any ~~one of Claims 1 to 3~~ Claim 1, wherein the porous electrically-conductive material is a porous silicon layer formed by the anodization of silicon.
5. (ORIGINAL) A method for producing a fuel cell comprising:  
A step of forming a substrate at least the surface of which is a porous electrically-conductive material;  
A step of forming a protonically-conductive membrane made of a mesoporous thin film comprising as a main component a crosslinked structure having a metal-oxygen skeleton having an acid group connected to at least a part thereof and having pores periodically aligned therein on the porous electrically-conductive material; and

A step of forming a porous electrically-conductive material layer on the protonically-conductive membrane.

6. (ORIGINAL) The method for producing a fuel cell as defined in Claim 5, wherein the step of forming the substrate involves a step of anodizing the surface of a silicon substrate to form a porous silicon layer thereon.
7. (ORIGINAL) The method for producing a fuel cell as defined in Claim 6, wherein the anodization step is preceded by a step of selectively etching the fuel cell forming region to a desired thickness.
8. (ORIGINAL) The method for producing a fuel cell as defined in Claim 6, wherein the step of forming a porous silicon layer is followed by a step of etching the silicon substrate on the back side thereof so that the porous silicon layer is reached to form a thin film.